

4.0 Evaluation Phase (Tier 2)

4.1 General

A Tier 1 Evaluation shall be completed for all buildings prior to performing a Tier 2 Evaluation. A Full-Building Tier 2 analysis and evaluation of the adequacy of the lateral-force-resisting system shall be performed for all buildings designated as "T2" in Table 3-3. For all other buildings, the design professional may choose to perform a Deficiency-Only Tier 2 evaluation that addresses only the deficiencies identified in Tier 1. Tier 2 procedures for further evaluation of Tier 1 deficiencies are identified by a section number in parentheses after each Tier 1 checklist evaluation statement.

A Tier 2 Evaluation shall include an analysis using one of the following linear methods: Linear Static Procedure, Linear Dynamic Procedure, or Special Procedure. Analysis procedures and component acceptance criteria are specified in Section 4.2. Unless otherwise designated in Table 3-3, the analysis as a minimum, shall address all of the potential deficiencies identified in Tier 1, using procedures specified in Sections 4.3 to 4.8.

If deficiencies are identified in a Tier 2 Evaluation, the design professional may perform a Tier 3 Evaluation in accordance with the requirements of Chapter 5. Alternatively, the design professional may choose to end the investigation and report the deficiencies in accordance with Chapter 1.

design and capacity over demand ratios that accounted for the lack of modern detailing.

FEMA 178 used an analysis procedure based on the *1988 NEHRP Provisions'* equivalent lateral force procedure using R factors and ultimate strength design. Nonconforming structural systems that did not have proper detailing were assigned lower R factors to account for their lack of ductility.

This Handbook uses a displacement-based lateral force procedure and m-factors on an element by element basis. It represents the most direct method for considering nonconforming systems. The lateral forces related to each of these approaches is radically different and cannot be directly compared.

Commentary:

The procedures for evaluating potential deficiencies have been completely revised from FEMA 178. The new procedures represent the most current available techniques and are consistent with procedures used in FEMA 273.

The original evaluation process defined in ATC-14 was based on the Uniform Building Code's equivalent lateral force procedure; a working stress based process using R_w factors, allowable stress